Water Heater

***Thermo Top C* Parking Heater** e1 00 0002

Installation documentation

Toyota Landcruiser (J15)

Diesel
from Model Year 2010
Left-hand drive vehicle
3- and 5-door
Front/rear automatic air-conditioning; manual air-conditioning system not checked
Manual and automatic transmission

WARNING!

Hazard warning:

Incorrect installation or repair of Webasto heating systems may cause a fire or result in the emission of carbon monoxide, which can be fatal. Serious or fatal injuries can be caused as a result.

Specialist company training, technical documentation, specialised tools and equipment are required to install and repair Webasto heating and cooling systems.
Only original Webasto parts must be used. For this, also see the catalog of air and water heater accessories from Webasto.

NEVER attempt to install or repair Webasto heating or cooling systems if you have not successfully completed the company training and thereby acquired the required technical skills, or if you do not have access to the required technical documentation, tools and equipment needed to carry out correct installation and repairs.

ALWAYS follow all Webasto installation and repair instructions and observe all warnings.

The initial startup is to be executed with the Webasto Thermo Test Diagnosis.

Webasto does not accept any liability for defects and damage that are attributable to installation by untrained staff.

Ident. No.: 1315651B_EN Fee Euro 10.00

Table of Contents

Validity

Manufacturer	Model	Type	EG-BE No./ABE
Toyota	Landcruiser	J15	e6 * 2007 / 46 * 0001 * ...

Engine type	Engine model	Output in kW	Displacement in cm³
1KD-FTV	Diesel	127	2982
1KD-FTV	Diesel	140	2982

Vehicle and engine types, equipment variants and national specifications not listed in this installation documentation have not been tested. However, installation according to this installation documentation may be possible.

Heater/Installation Kit

Quantity	Description	Order No.:
1	*Thermo Top C* retail accessories	See price list
1	Installation kit for Toyota Landcruiser (J15) 2010 Diesel	1315652A
1	Heater control	See price list

Foreword

This installation document applies to the Toyota Landcruiser (J15) Diesel vehicles - for validity, see page 2 - from model year 2010 and later, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded. Depending on the vehicle version and equipment, modifications may be necessary during installation with respect to this installation documentation.

However, where this is the case the stipulations in this "installation documentation" and "operating and maintenance instructions" for the *Thermo Top C* should be observed.
The corresponding rules of technology and any information from the vehicle manufacturer should be observed during the installation work.

General Instructions

Installation should be carried out according to the general, standard rules of technology. Unless specified otherwise, fasten hoses, lines and wiring harnesses to original vehicle lines and wiring harnesses using cable ties.
Sharp edges should be fitted with rub protection (split-open plastic hose).
Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K, Order No. 111329).

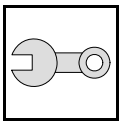
Special Tools

- Torque wrench for 2.0 - 10 Nm
- Hose clamping pliers

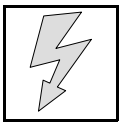
Explanatory Notes on Document

To provide you with a quick overview of the individual working steps, you will find an identification mark on the outside top right corner of the page in question.

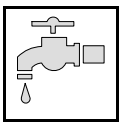
Mechanical system



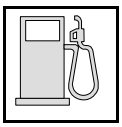
Electrical system



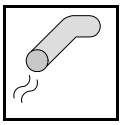
Coolant circuit



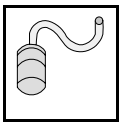
Fuel



Exhaust gas



Combustion air



Software

Special features are highlighted using the following symbols:

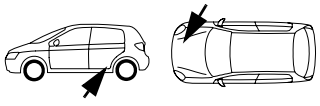
Specific risk of injury or fatal accidents.

Specific risk of damage to components.

Specific risk of fire or explosion.

Reference to general installation instructions of Webas- to components or to the manufacturer's vehicle-specific documents.

Reference to a special technical feature.



The arrow in the vehicle icon indicates the position on the vehicle and the viewing angle.

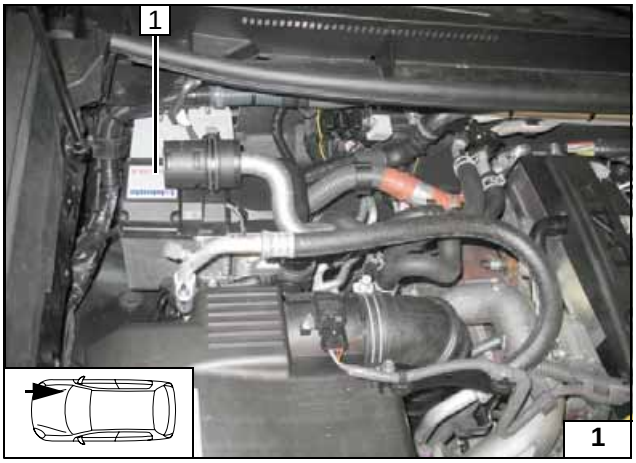
All dimensions are in mm!
Tightening torque of hose clamps = 2.0 + 0.5 Nm!
Tightening torque of Ejot screws, Ejot studs = 10 Nm!

Preliminary Work

WARNING!

- Open the fuel tank cap, ventilate the tank.
- Close the tank cap again.
- Disconnect the battery "earth" or "ground" connection.
- Depressurise the cooling system.
- Copy the factory number from the original type label to the duplicate type label.
- Remove years that do not apply from the duplicate label.
- Attach the duplicate label (type label) in the appropriate place.
- Remove the entire air filter box.
- Remove the lower instrument panel trim on the front passenger side.
- Remove the glove compartment
- Remove front door sill cover on front passenger side
- Remove the A-pillar trim in the footwell on the front passenger side.

Remove page 30 "Operating Instructions for End Customer" and add to the vehicle operating instructions.



Heater installation location

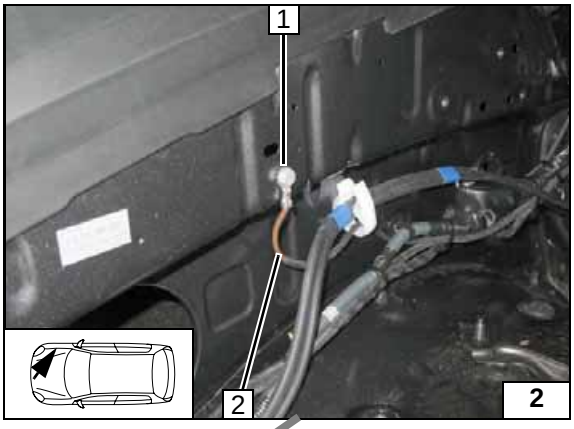
1 Heater

Installation location

Electrical system

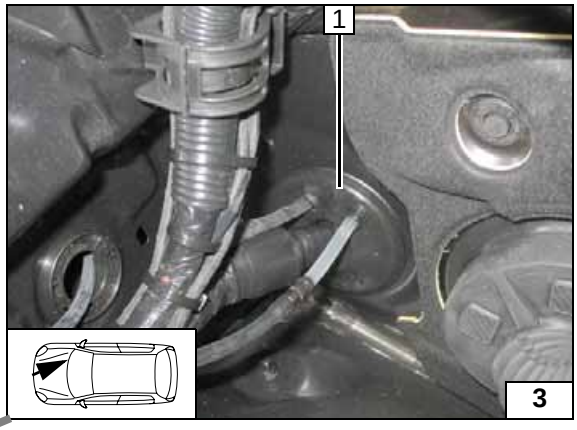
Earth wire

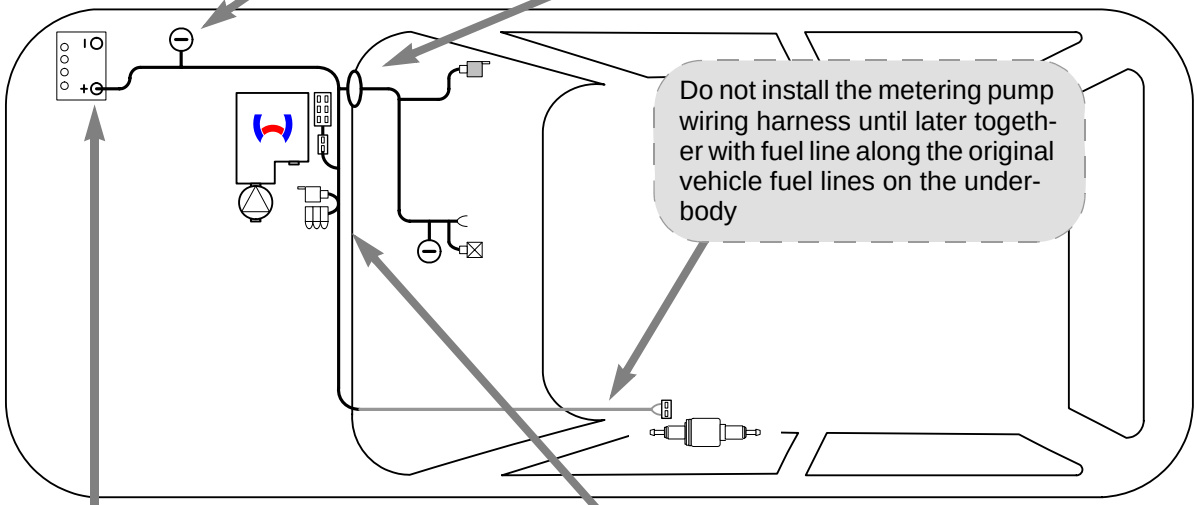
1 M6x20 bolt, spring lockwasher, toothed washer, original vehicle threaded hole
2 Earth wire



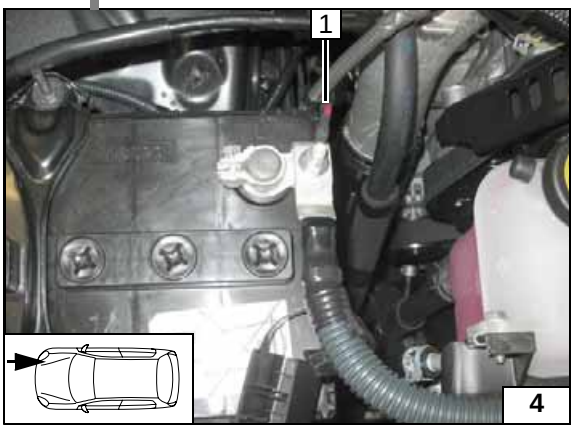
Wiring harness pass through

1 Protective rubber plug



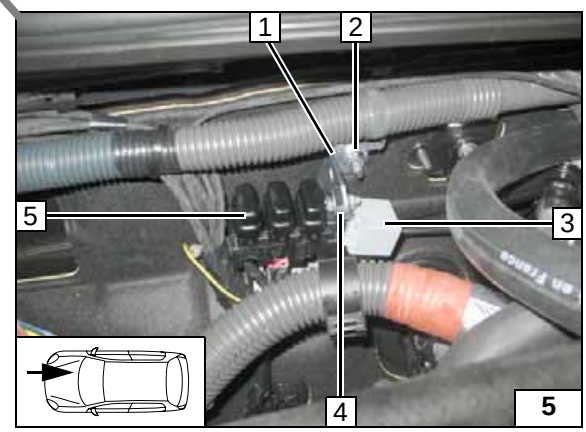


Wiring harness routing diagram



Positive wire

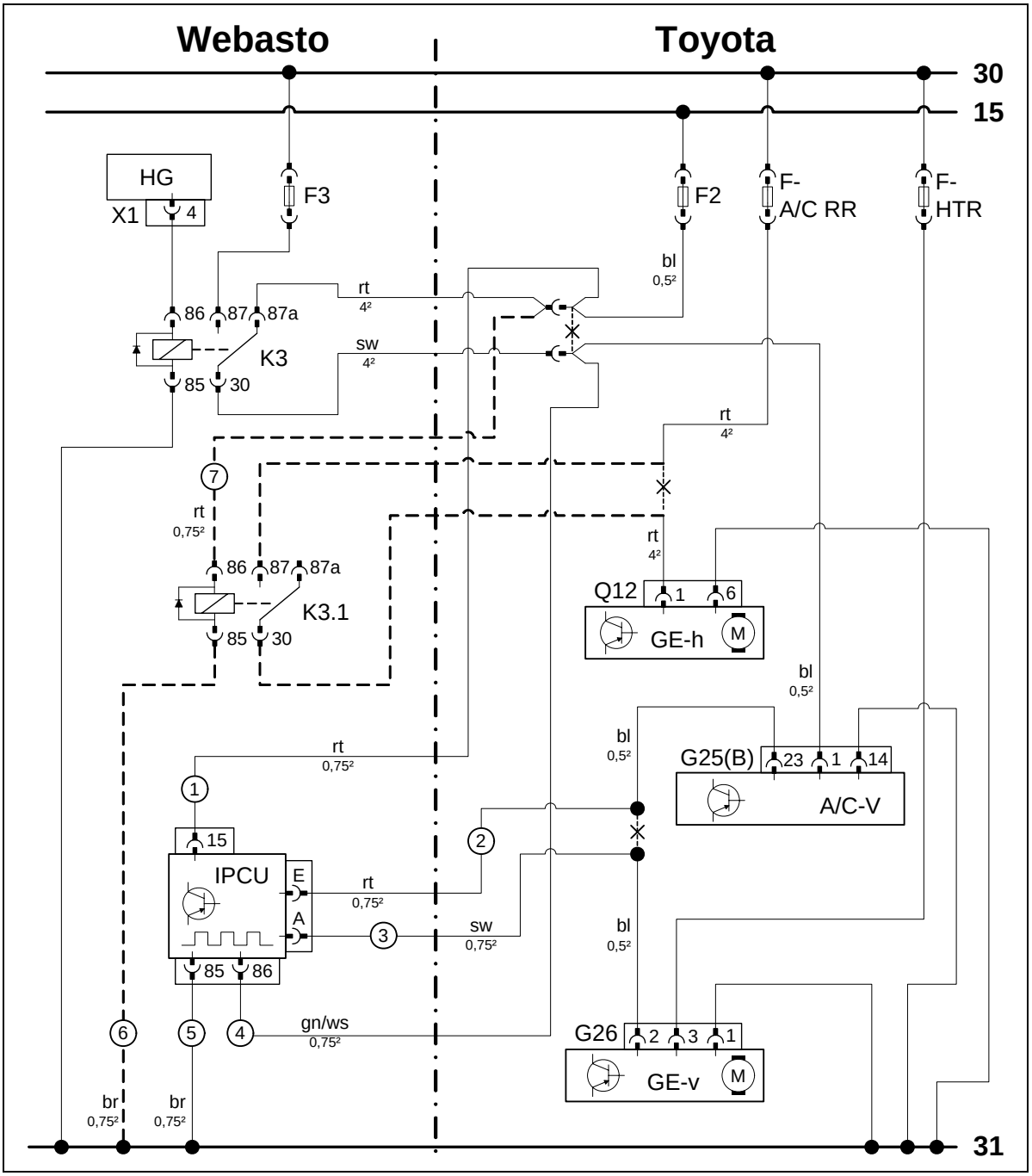
1 Positive wire on positive terminal of battery



Fuse holder, K3 relay

1 Angle bracket
2 Original vehicle stud bolt, flanged nut
3 K3 relay
4 M5x16 bolt, washer, retaining plate for fuse holder, flanged nut
5 Fuses F1-3 mounted

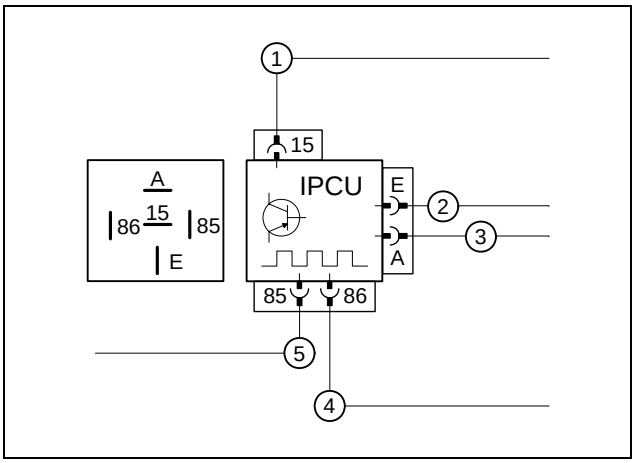
Fan control



Wiring diagram of automatic air-conditioning, front and rear

Webasto components		Vehicle components		Colours and symbols	
HG	Heater TT-C	A/C-V	A/C booster	rt	red
X1	6-pin heater connector	G25(B)	40-pin connector A/C V	ws	white
F3	Replace 25 A fuse with 10 A fuse	GE-v	Fan unit, front	sw	black
		G26	3-pin connector GR	br	brown
K3	Fan relay	F2	10 A fuse	gn	green
K3.1	Additional relay	F-HTR	50 A fan fuse	bl	blue
IPCU	Pulse width modulator	F-A/C RR	40A rear fan fuse		
IPCU adjustment values:				The connections shown by dashed line are required only for the rear ventilation system !	
Duty cycle:	65%	GE-h	Fan unit, rear		
Frequency:	400 Hz	Q12	6-pin connector GE-h		
Voltage:	9,0V	AQ1	6-pin connector	**X**	Cutting point
Function:	Low-side			Wiring colours may vary.	

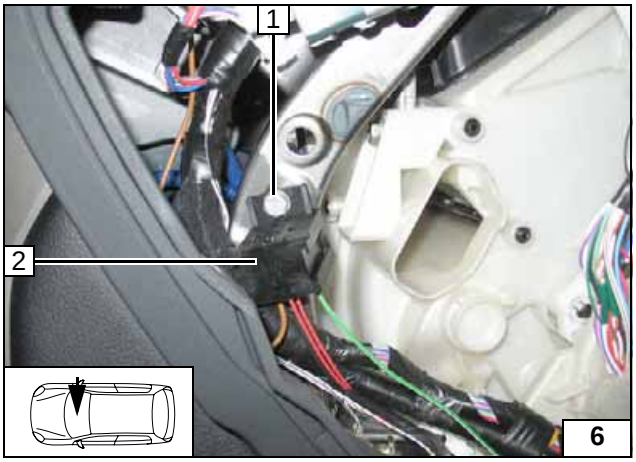
Legend



Connect wires to IPCU. IPCU view on the contact side Cut protective sleeving at the centre and draw wires **2** and **3** into separate protective sleeving!

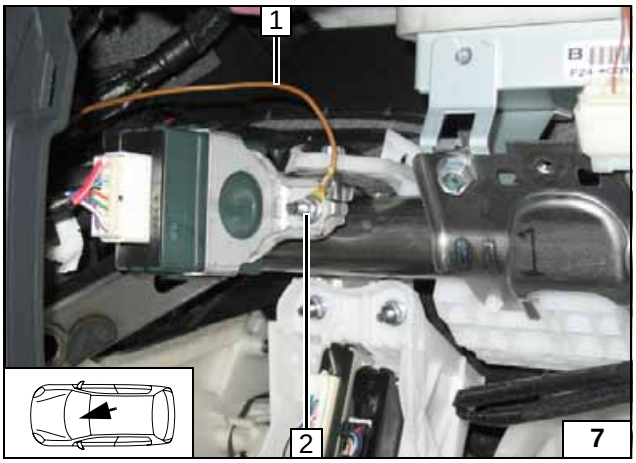
Premounting IPCU

1 Red (rt) wire of 0.75mm² 500 length
2 Red (rt) wire of 0.75mm² 500 length
3 Black (rt) wire of 0.75mm² 500 length
4 Green/white (gn/ws) wire of 0.75mm² 500 length
5 Brown (br) wire of 0.75mm² 500 length



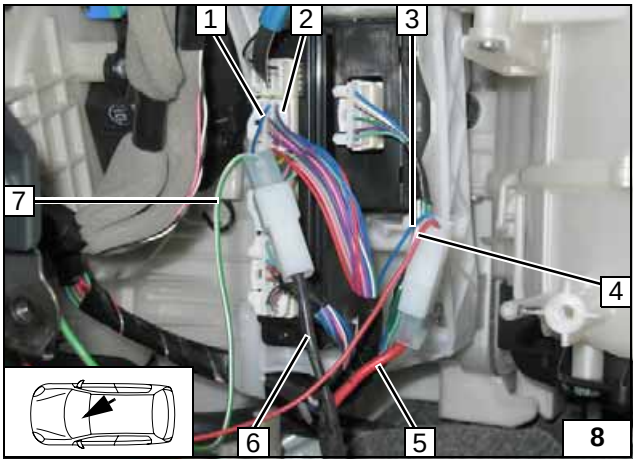
Installing IPCU

1 M6x16 bolt, washer, original vehicle threaded hole
2 Socket of IPCU



Earth connection for IPCU

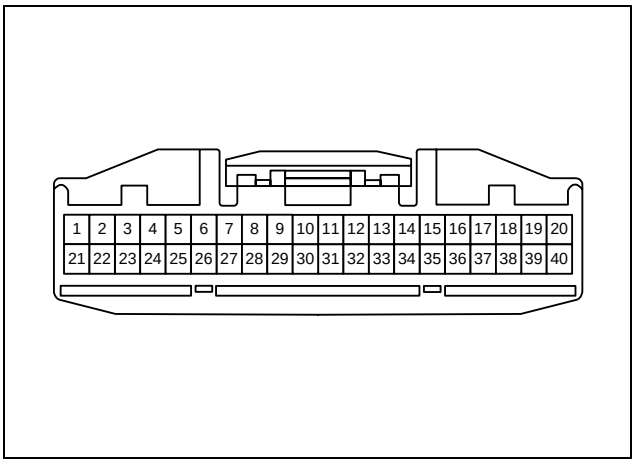
1 Brown (br) wire of IPCU/85
2 Original vehicle stud bolt, flanged nut



Connect to the 40-pin connector **2** of the A/C booster. For rear air conditioning system, connect red (rd) wire K3.1/86 additionally (See Figure 13).
Produce connections as shown in wiring diagram.

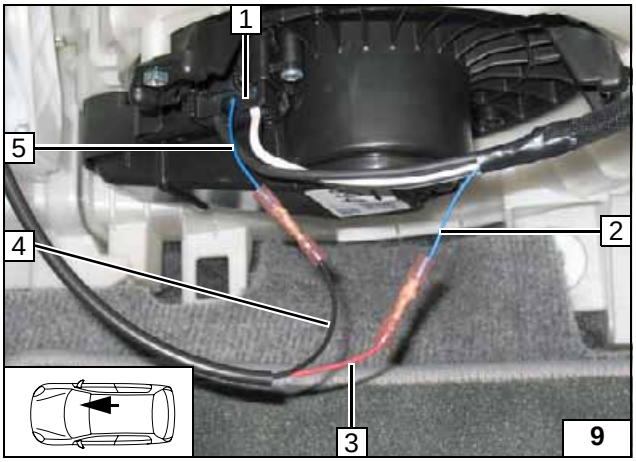
Connecting the A/C booster

1 Blue (bl) wire to 40-pin connector Pin1 Terminal 15
3 Blue (bl) wire from fuse F2
4 Red (rt) wire of IPCU/15
5 Red (rt) wire of K3/87a
6 Black (sw) wire of K3/30
7 Green/white (gn/ws) wire of IPCU/86



View from contact side!

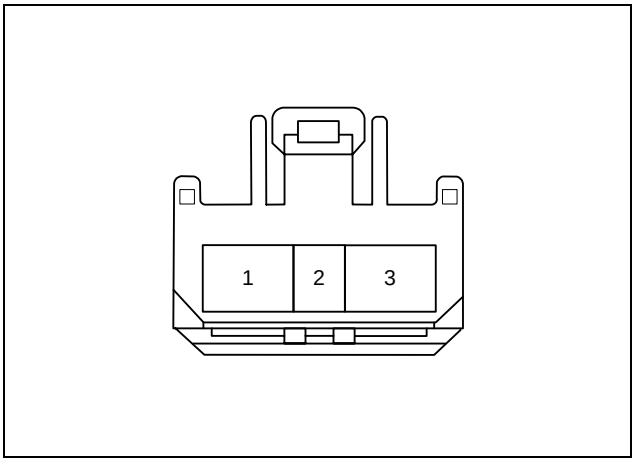
G25(B) connector



Connection to 3-pin connector **1** from the fan unit.
Produce connections as shown in wiring diagram.

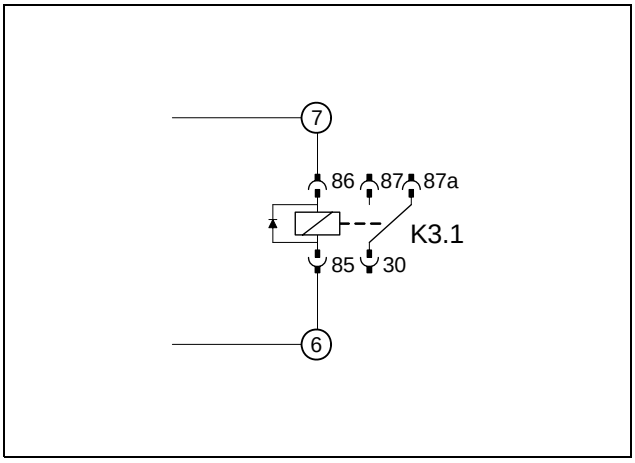
2 Blue (bl) wire of A/C booster
3 Red (rt) wire of IPCU/E
4 Black (sw) wire of IPCU/A
5 Blue (bl) wire of 3-pin connector Pin 2

Connecting fan unit



View from contact side!

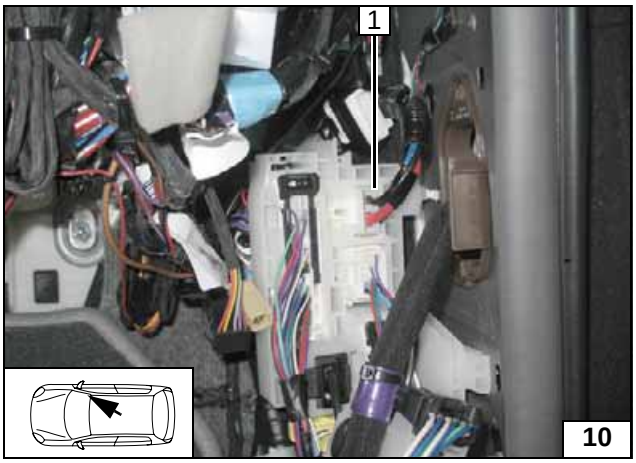
Connector G26



Additionally for rear air-conditioning system
(Switch-off function of rear fan unit)
Pull wire section **7** into protective sleeving.

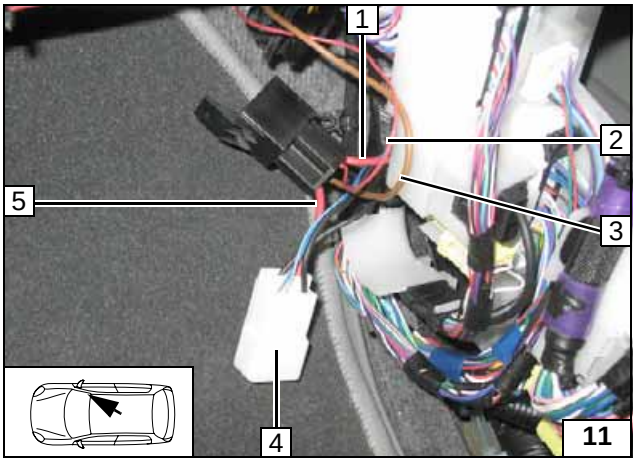
6 Brown (br) wire of 0.75mm² 500 length
7 Red (rt) wire of 0.75mm² 500 length

Premounting additional relay K3.1



Remove 6-pin connector **1** AQ1.
Unlock the remaining coupling in the housing and pull out in the rear direction!

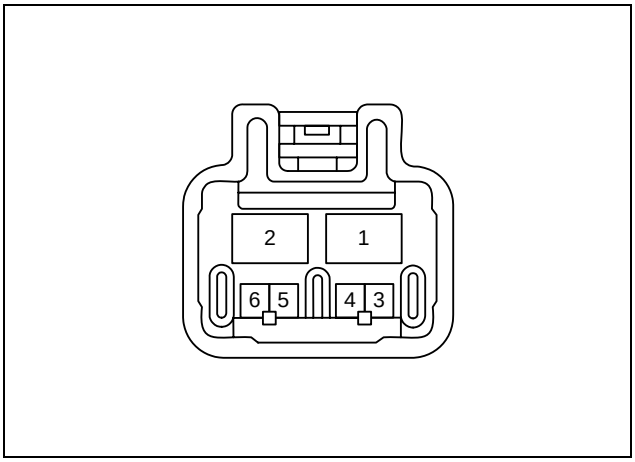
Detaching connector



connection to 6-pin coupling **4** AQ1.
Cut red (rt) wire from 6-pin coupling AQ1 Pin 2 approx. 60mm before the coupling, and install in additional relay K3.1 Terminals 87 and 30. Produce connections as shown in wiring diagram. Fasten additional relay K3.1 with cable tie to original vehicle wiring harness!

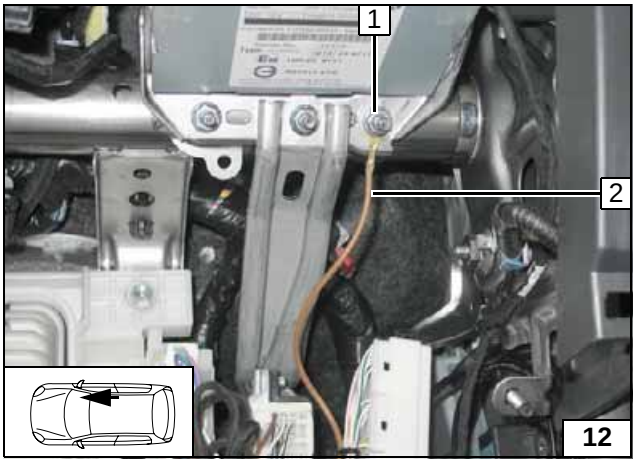
1 Red (rt) wire of fuse A/C RR
2 Red (rt) wire K3.1/86
3 Brown (br) wire K3.1/85
5 Red (rt) wire of 6-pin coupling AQ1 Pin 2

Connecting additional relay K3.1



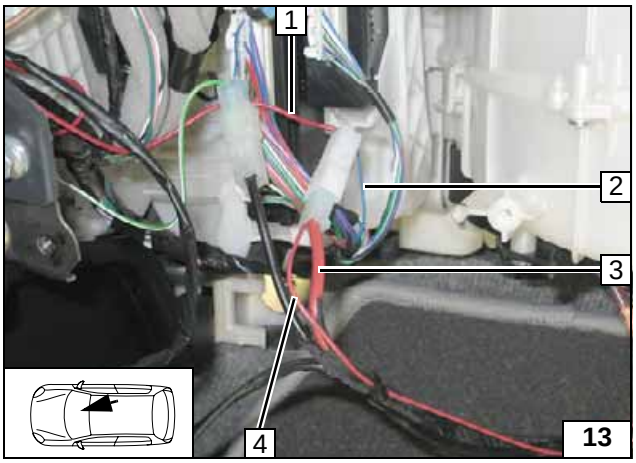
View from contact side!

Coupling AQ1



1 Original vehicle stud bolt, flanged nut
2 Brown (br) wire K3.1/85

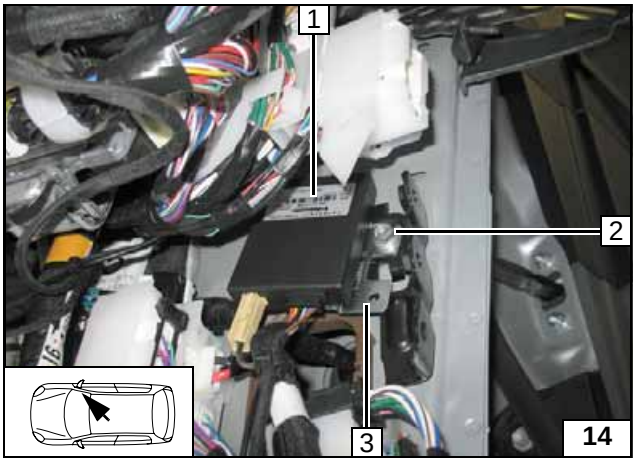
Earth connection K3.1-relay



Produce connections as shown in wiring diagram.

1 Red (rt) wire of IPCU/15
2 Blue (bl) wire from fuse F2
3 Red (rt) wire of K3/87a
4 Red (rt) wire K3.1/86

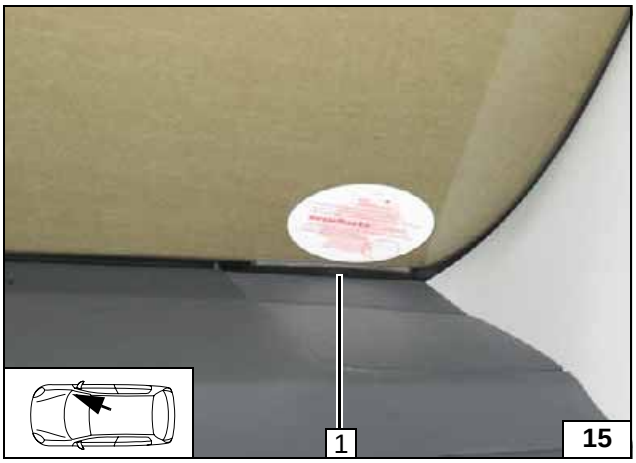
Controller of additional relay K3.1



Telestart

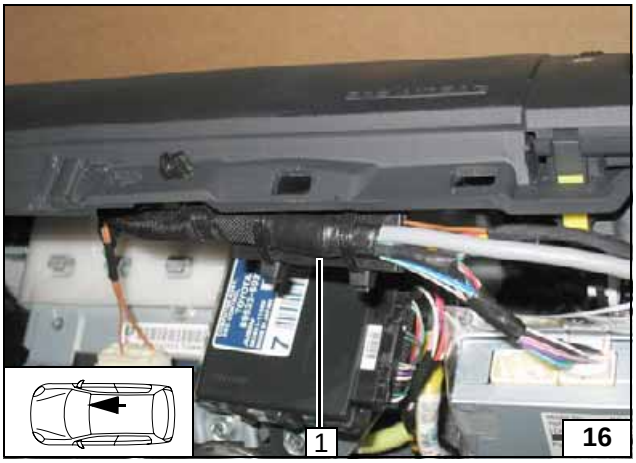
1 Receiver
2 Original vehicle bolt
3 Bracket

Installing receiver



1 Antenna

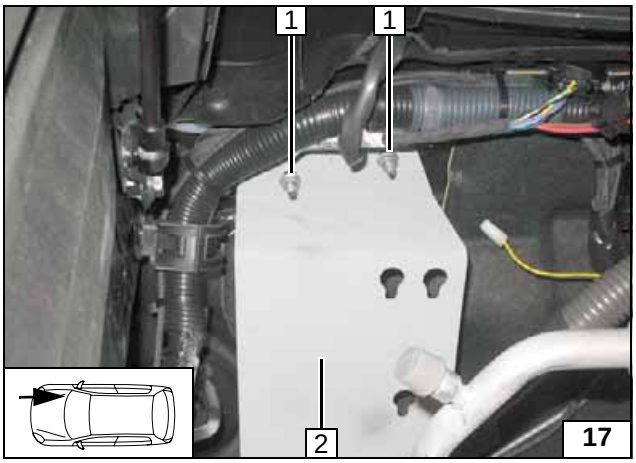
Installing antenna



Temperature sensor HTM100

Fasten temperature sensor **1** to original vehicle wires with cable tie!

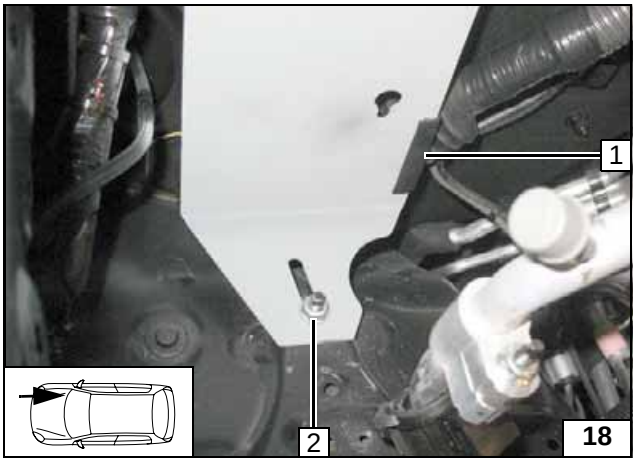
Installing temperature sensor



Preparing installation location

1 Flanged nut [2x], original vehicle stud bolt
2 Bracket

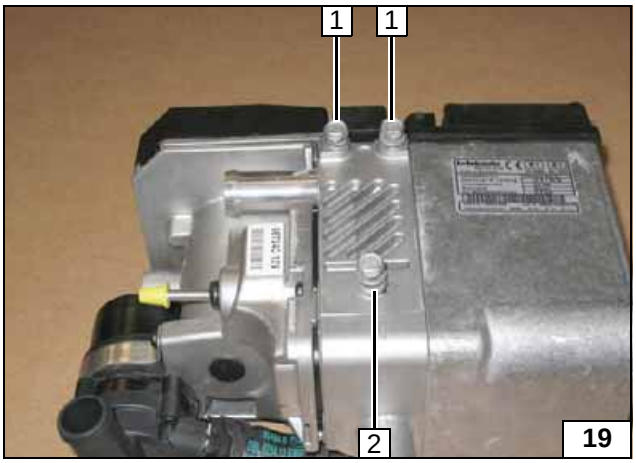
Installing bracket



Align bracket in the oblong hole in the rear up to the stop!

1 50 mm edge protection
2 M8 flanged nut, original vehicle stud bolt

Installing bracket

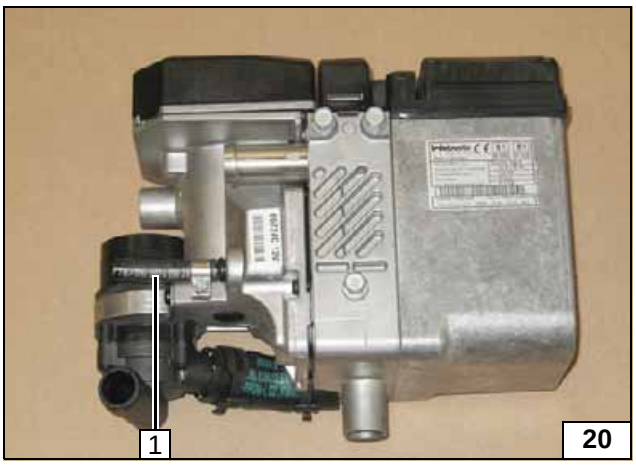


Preparing heater

Insert two washers at Position **2**!

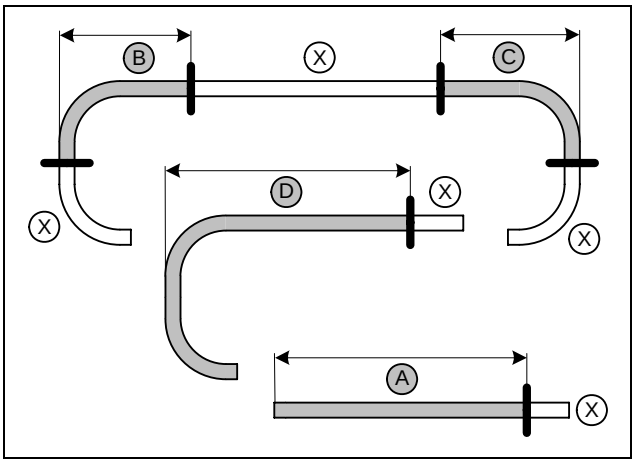
1 Ejot screw [2x]
2 Ejot screw, washer [2x]

Loosely mount Ejot screws



1 Hose section, 10 mm dia. clamp

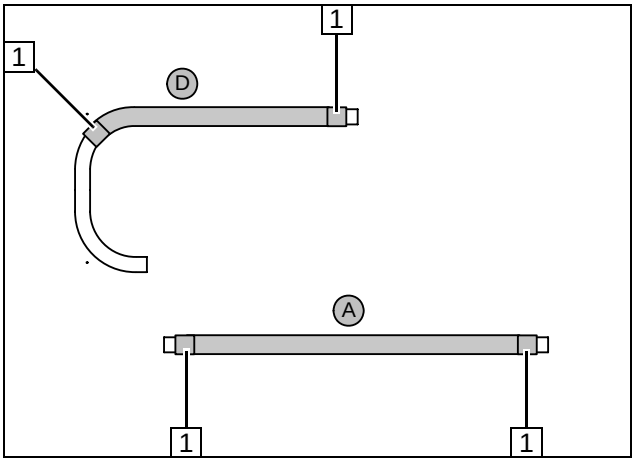
Installing hose section



Discard section **X**. Shorten hose.
Hose **B / C** = 20mm dia hose
Hose **A** = Hose Ø 15
Hose **D** = 15mm dia moulded hose

A = 650
B = 110
C = 140
D = 540

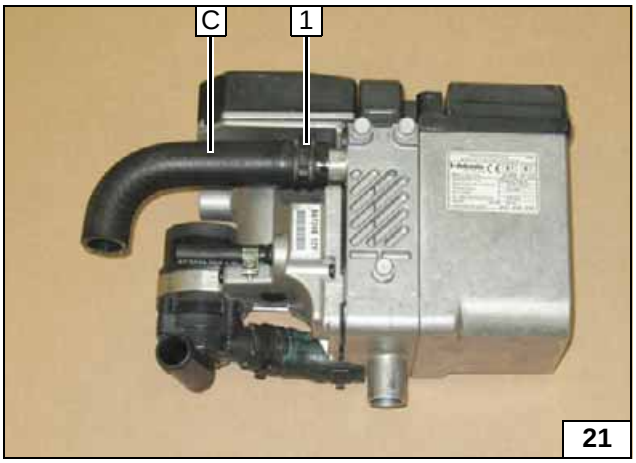
Cutting coolant hoses to length



Push braided protection hoses onto hose **A** and **D** and cut to length.
Cut heat shrink plastic tubing to length.

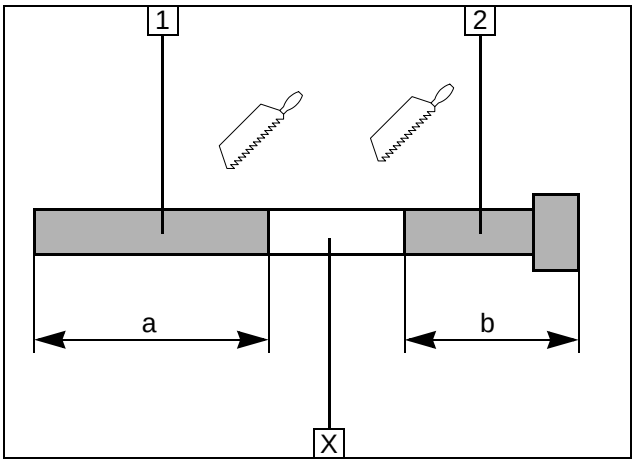
1 50 mm long heat shrink plastic tubing [4x]

Preparing coolant hoses



1 27 mm dia. spring clip

Installing hose C

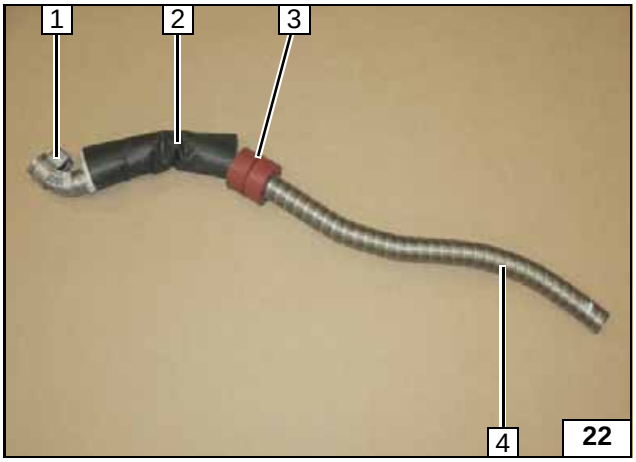


Exhaust gas

Discard section **X**

1 Exhaust pipe
a = 610
2 Exhaust end section
b = 170

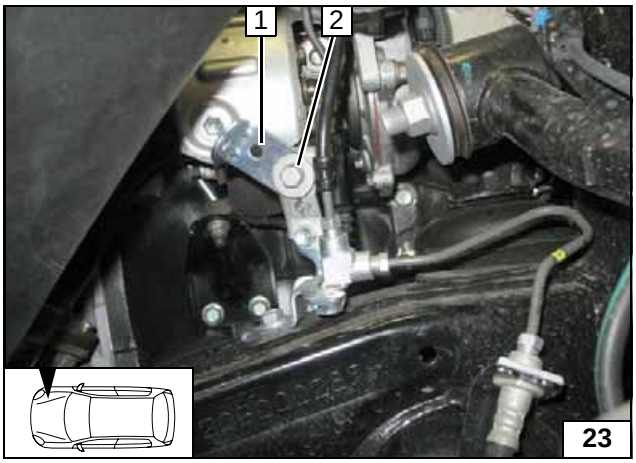
Preparing exhaust pipe



Mould exhaust pipe **4** as shown!

1 Push on hose clamp
2 Push on exhaust-gas insulation
3 Red (rt) rubber isolator [2x]

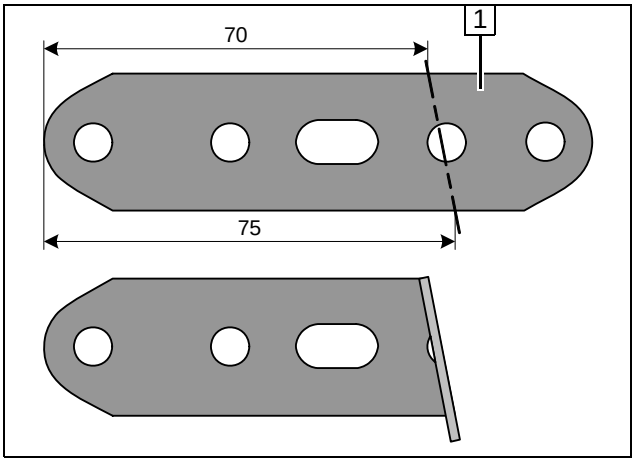
Premounting exhaust pipe



Remove original vehicle bolt at Position **2** and discard!

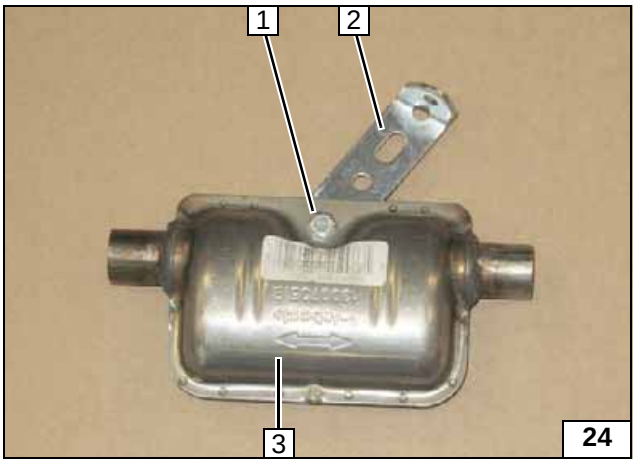
1 Angle bracket
2 M6x16 bolt, spring lockwasher, large diameter washer, existing threaded hole

Installing angle bracket



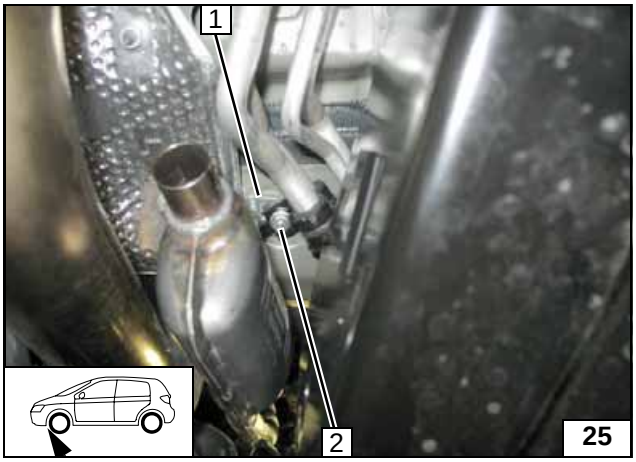
Bend perforated bracket **1** by 90°.

Preparing perforated bracket



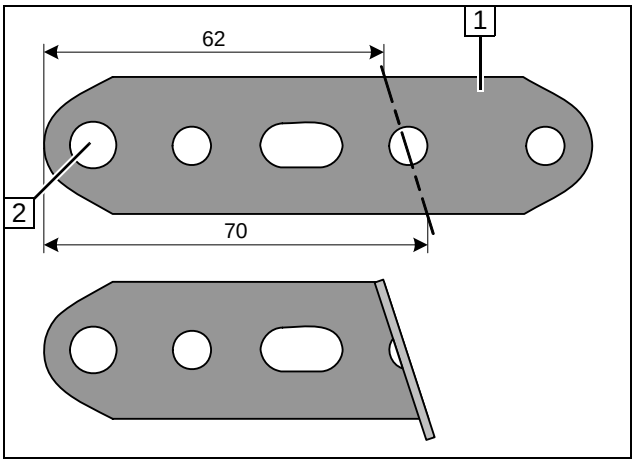
1 M6x20 bolt, flanged nut
2 Perforated bracket
3 Silencer

Premounting silencer



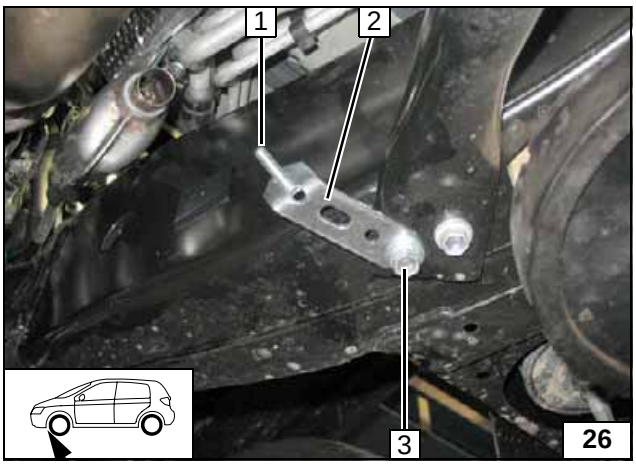
1 Perforated bracket
2 Original vehicle stud bolt, flanged nut

Installing silencer



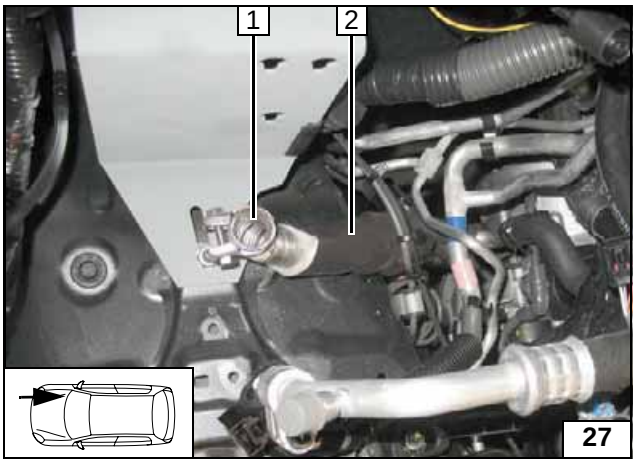
Drill perforated bracket **1** at Position **2** to 8.5mm dia and angle down by 90°**!**

Preparing perforated bracket



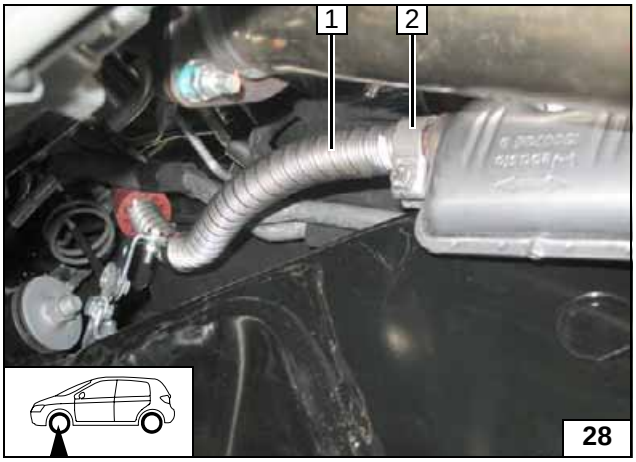
1 M6x20 bolt
2 Perforated bracket
3 Original vehicle bolt

Installing perforated bracket



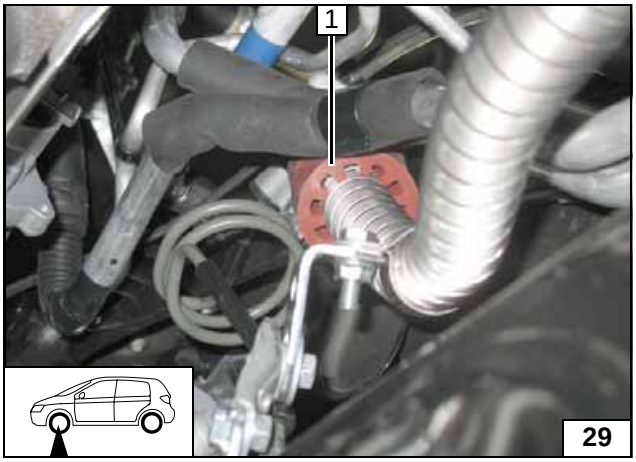
Insert exhaust pipe **1** between AC wire and frame side member, and route to underbody. Align insulation **2**!

Routing exhaust pipe



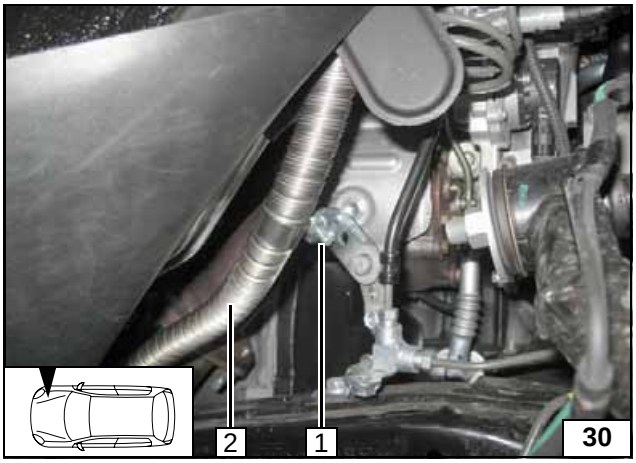
1 Exhaust pipe
2 Hose clamp

Installing exhaust pipe



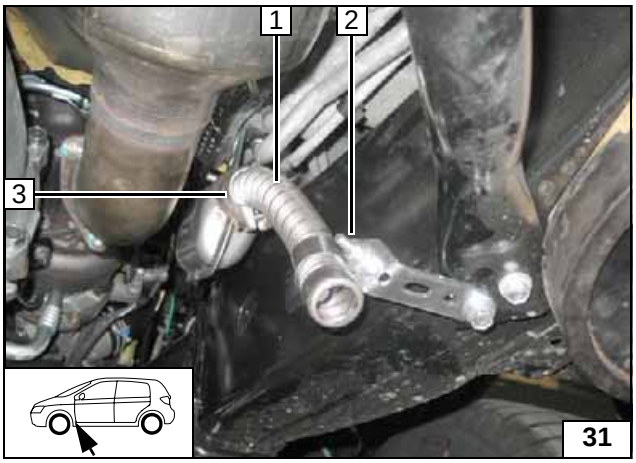
1 Red (rt) rubber isolator [2x]

Positioning rubber isolator



1 M6x20 bolt, pipe clamp, flanged nut
2 Exhaust pipe

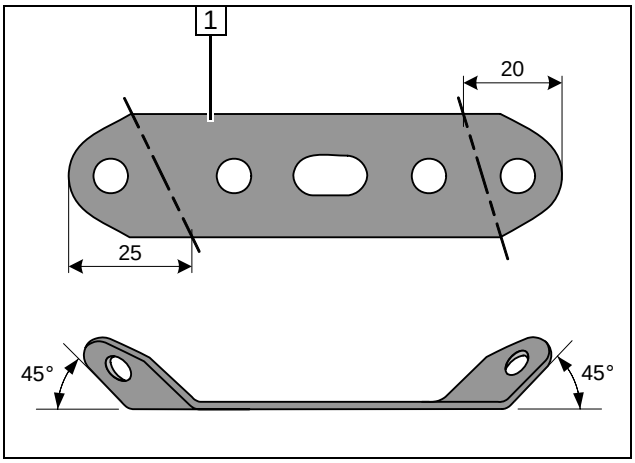
Fastening exhaust pipe



Align exhaust system. Ensure sufficient distance to neighbouring components.

1 Exhaust end section
2 M6x20 bolt, pipe clamp, flanged nut
3 Hose clamp

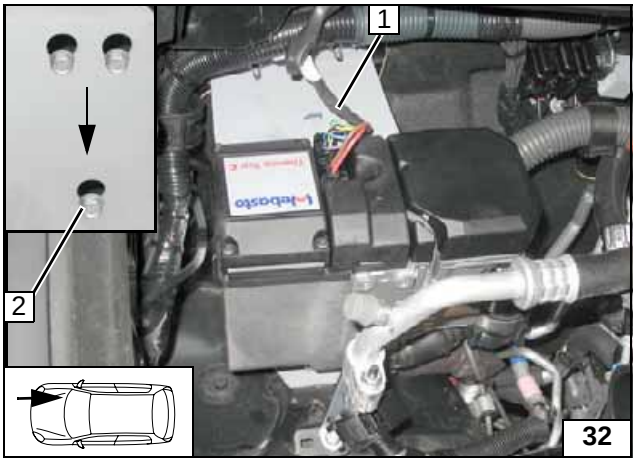
Installing exhaust end section



Installing heater

1 Angle down perforated bracket

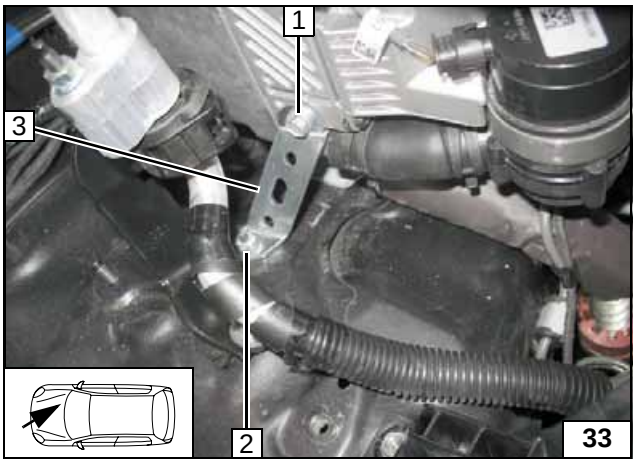
Preparing perforated bracket



Fasten exhaust pipe with hose clamp on exhaust connection piece. Install heater with Ejot screws in the oblong holes from the bracket (position two washers between heater and bracket at Position **2**), align downwards and fasten!

1 Mount wiring harness of heater

Installing heater



Check position of all components and adjust if necessary. Check that they have freedom of movement.

1 Ejot screw
2 M6x20 bolt, spring lockwasher, existing threaded hole
3 Perforated bracket

Installing heater

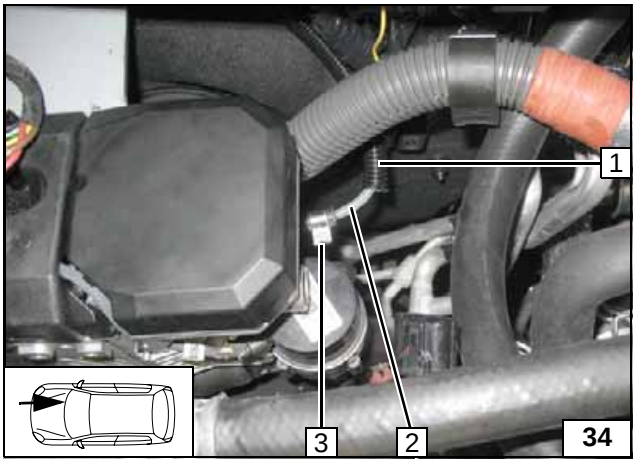
Fuel

CAUTION!
Open the vehicle's fuel tank cap, ventilate the tank and then re-close the tank lock.

Catch any fuel running off with an appropriate container.

Install fuel line and metering pump wiring harness so that they are protected against stone impact. Unless specified otherwise, always fasten using cable ties.
Mount the fuel line and wiring harness with rub protection on sharp edges.

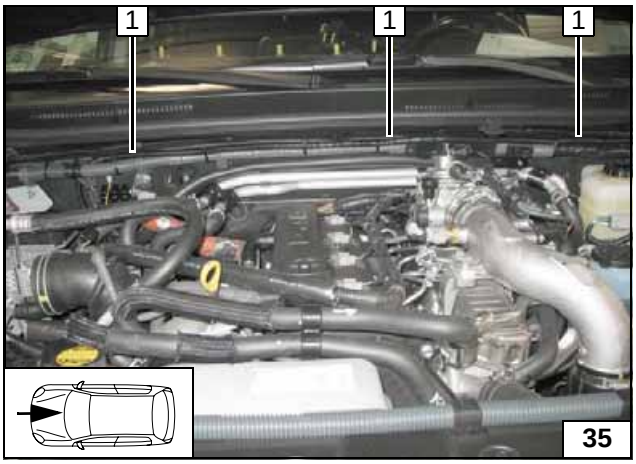
WARNING!
The fuel line and wiring harness are routed to the metering pump in as shown in the wiring harness routing diagram.



Slide 1130 mm corrugated tube **3** onto fuel line **2** and wiring harness of metering pump.

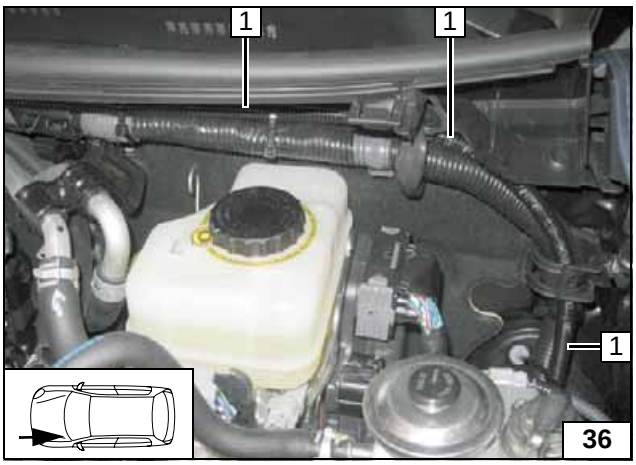
3 10 mm dia. clamp

Connecting heater



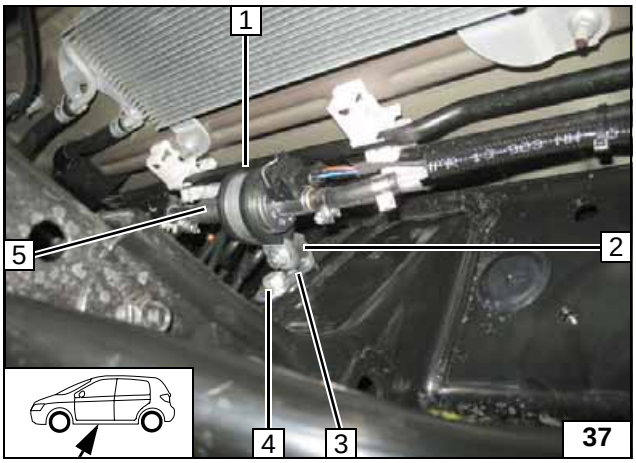
Route fuel line and wiring harness of metering pump in corrugated tube **1** to the left vehicle side!

Installing lines



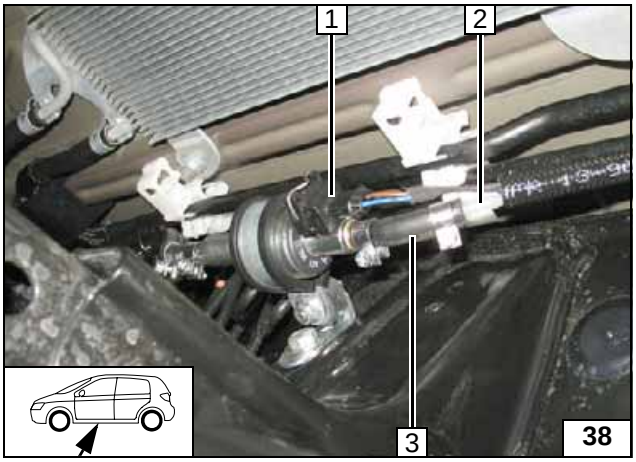
Route fuel line and wiring harness of metering pump in 2100 corrugated tube **1** to underbody and further to original vehicle fuel lines at the installation location of the metering pump!

Installing lines



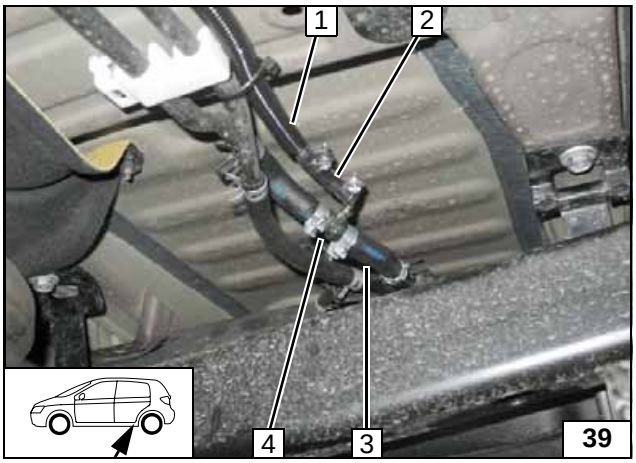
1 Rubber-coated pipe clamp
2 Silent block, flanged nut [2x]
3 Angle bracket
4 M8x20 bolt, spring lockwasher, existing threaded hole
5 Metering pump

Installing metering pump



1 Wiring harness of metering pump, connector mounted
2 Fuel line
3 Hose section, 10 mm dia. clamp [2x]

Connecting metering pump

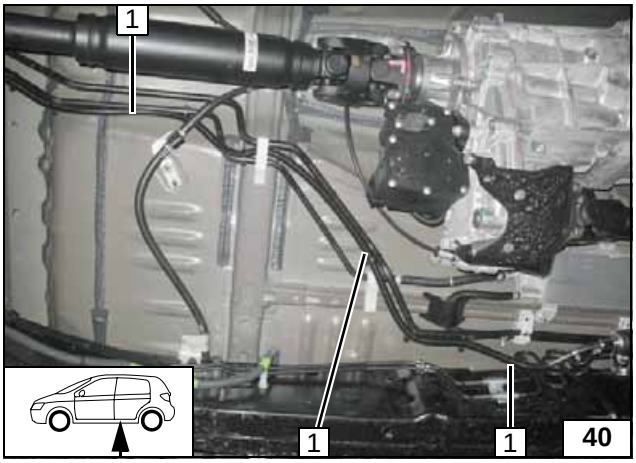


3-door

Cut off fuel supply line **3** at position **4**. Slide 1130 mm corrugated tube **1** onto fuel line.

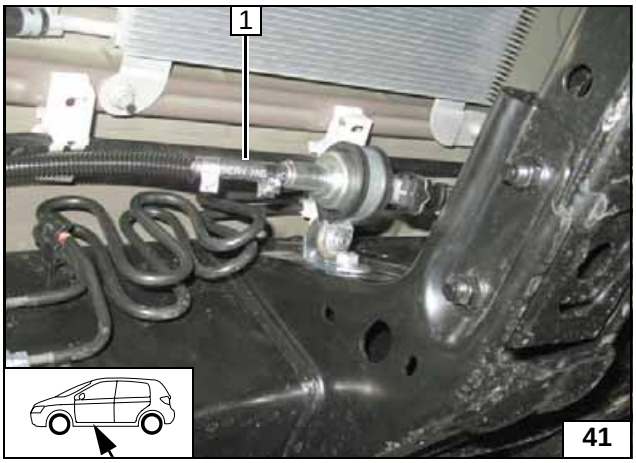
2 Hose section, 10 mm dia. clamp [2x]
4 10x5x10 fuel standpipe, clamp 14mm dia [2x]

Removing fuel



Route fuel line in corrugated tube **1** to original vehicle fuel lines of the metering pump!

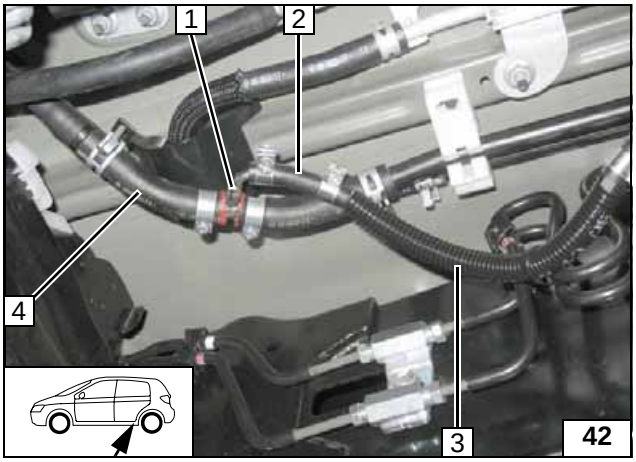
Routing fuel line



Check the position of the components; adjust if necessary. Check that they have freedom of movement.

1 Fuel line, hose section, 10 mm dia. clamp [2x]

Connecting metering pump

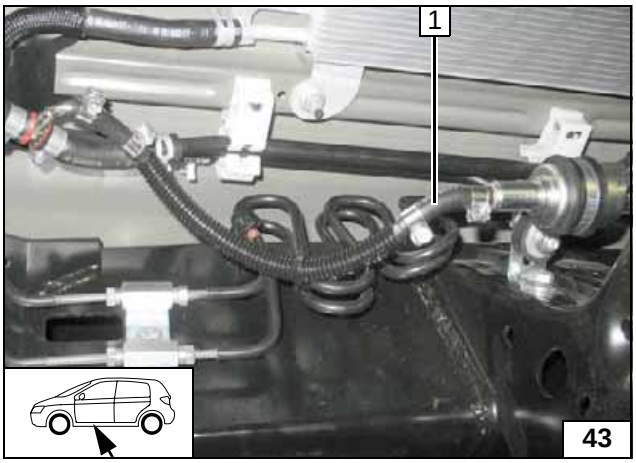


5-door

Cut off fuel supply line **4** at position **1**. Slide corrugated tube **3** onto fuel line.

1 10x5x10 fuel standpipe, clamp 14mm dia [2x]
2 Hose section, 10 mm dia. clamp [2x]

Removing fuel



Check the position of the components; adjust if necessary. Check that they have freedom of movement.

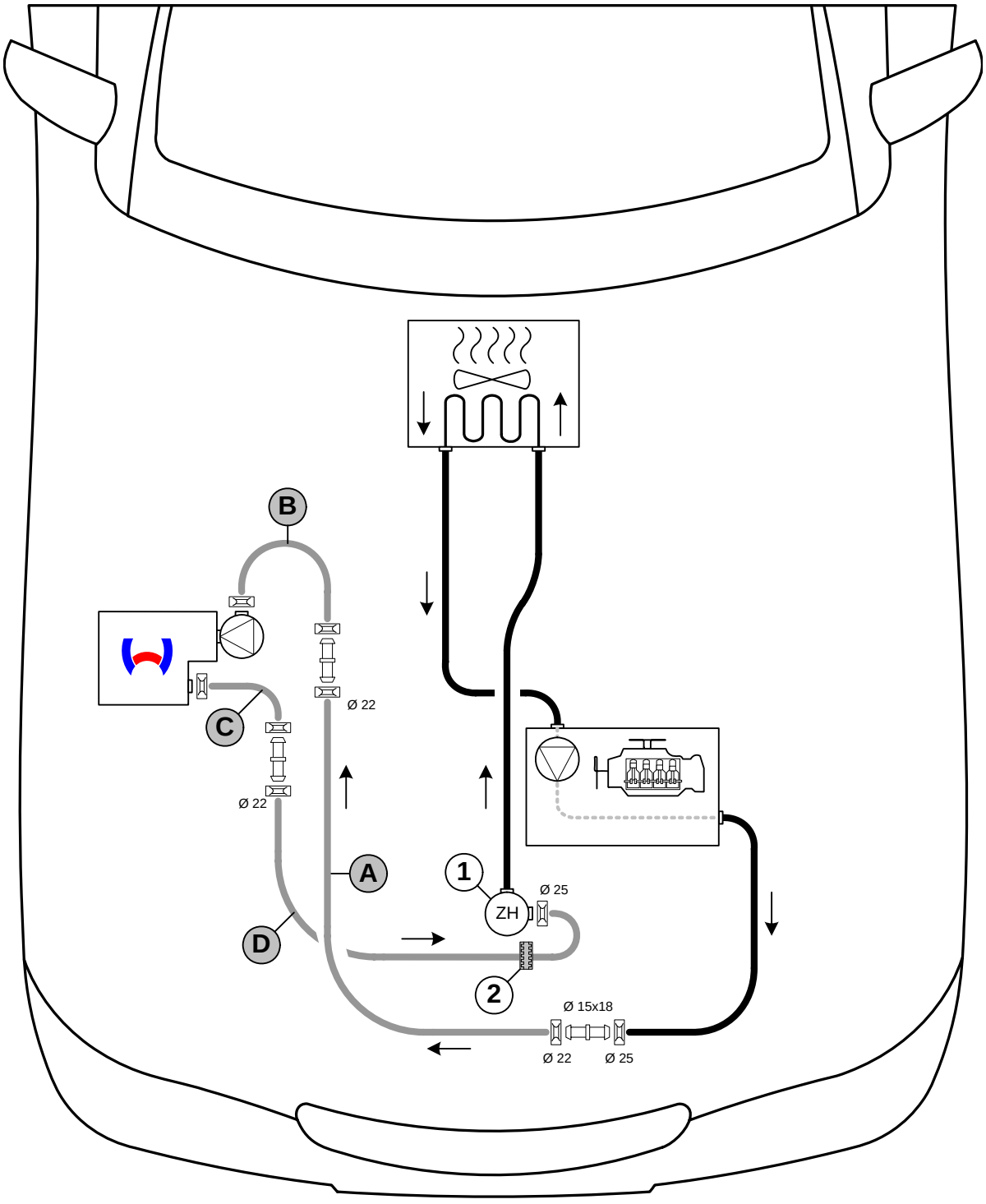
1 Fuel line, hose section, 10 mm dia. clamp [2x]

Connecting metering pump

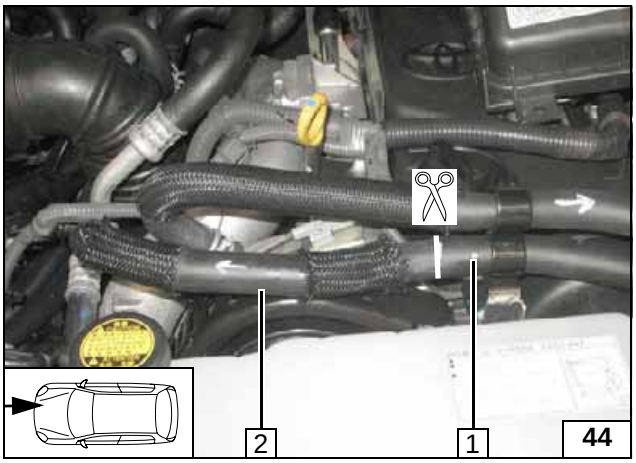
Coolant circuit (heater without rear AC)

WARNING!
Any coolant running off should be collected using an appropriate container. Install hoses so that they are kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that no other hose can be damaged. When installing the hoses, the heater must be filled with coolant.
The connection should be "inline" based on the following diagram:

Hose routing diagram



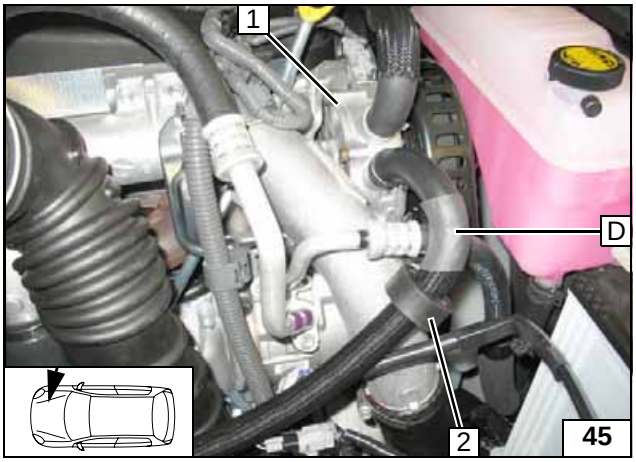
All spring clips without a specific designation = 27 mm dia. **2** = Black (sw) rubber isolator.
All connecting pipes without a specific designation = dia. 15x20.
1 = Mechanical auxiliary heater (power heater)!



Remove hose section **2** and discard. Spring clip will not be reused!

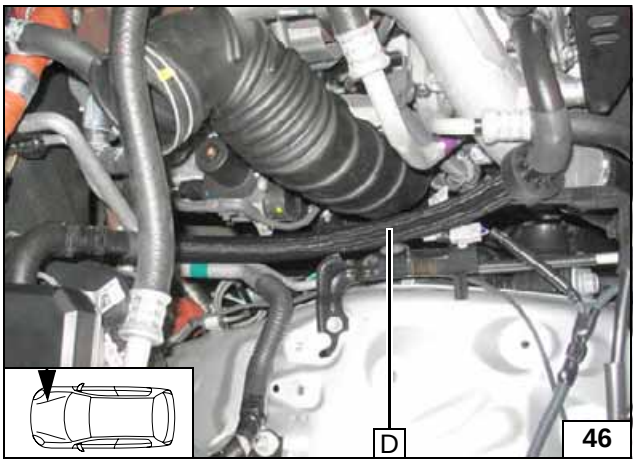
1 Engine-outlet hose section

Cutting point

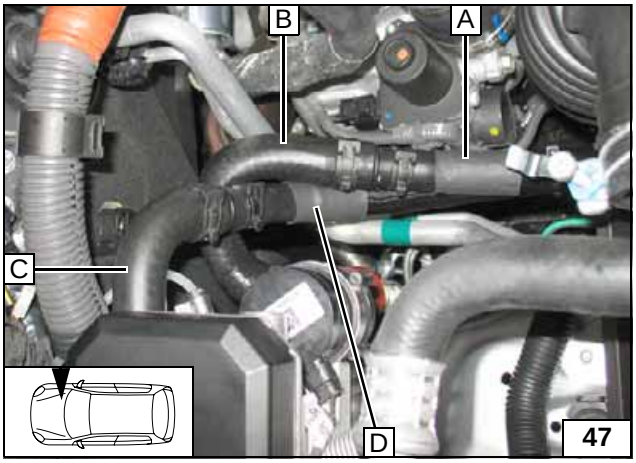


1 Mechanical auxiliary heater (power heater)!
2 Slide on black (sw) rubber isolator and align.

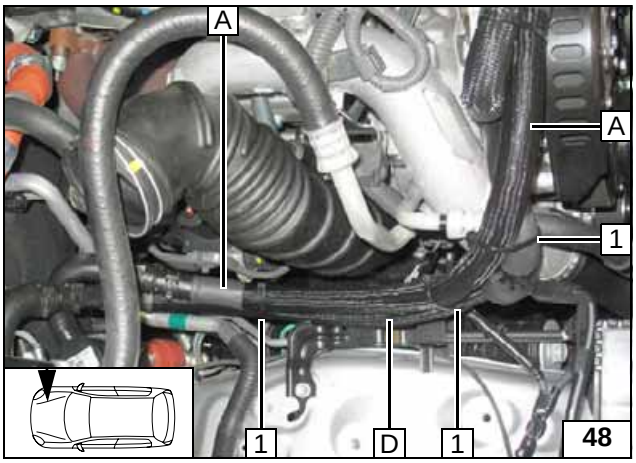
Connecting heat exchanger inlet



Routing in engine compartment

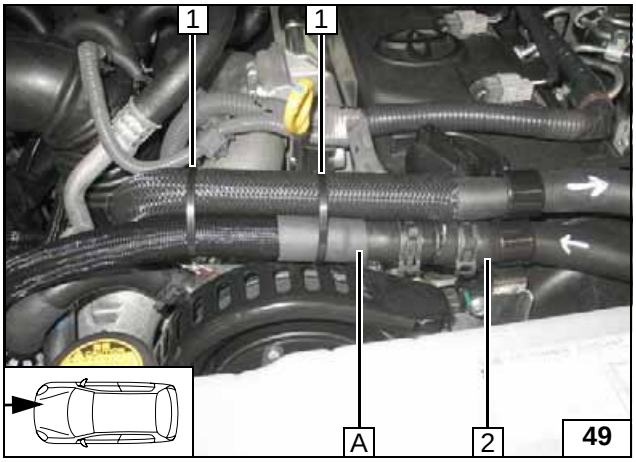


Connecting heater



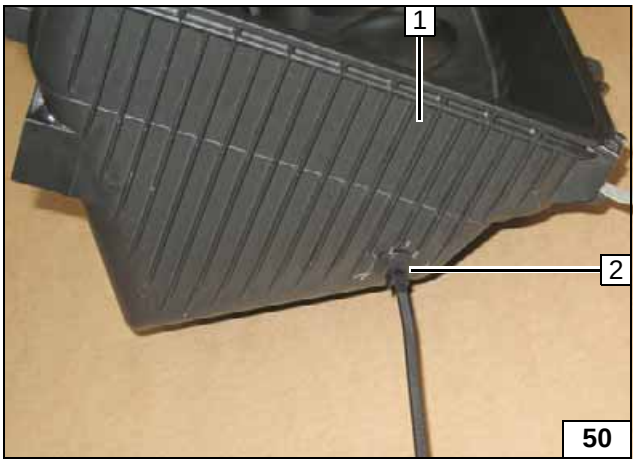
1 Cable tie

Routing in engine compartment



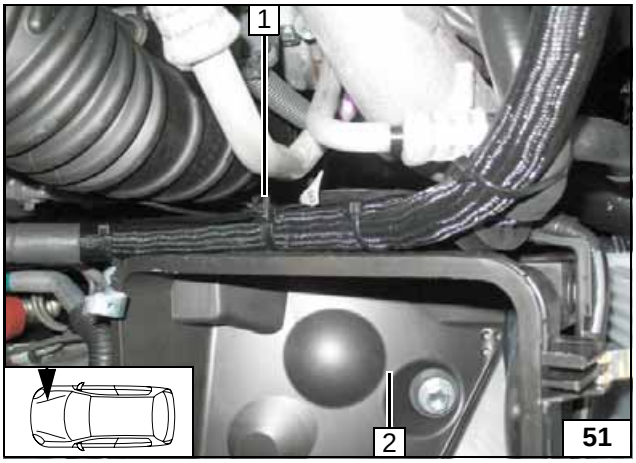
1 Cable tie [2x]
2 Hose of engine outlet

Connecting engine outlet



Drill 6mm dia hole in air filter box **1** at Position **2** and install clip-type cable tie**2**!

Preparing air filter box



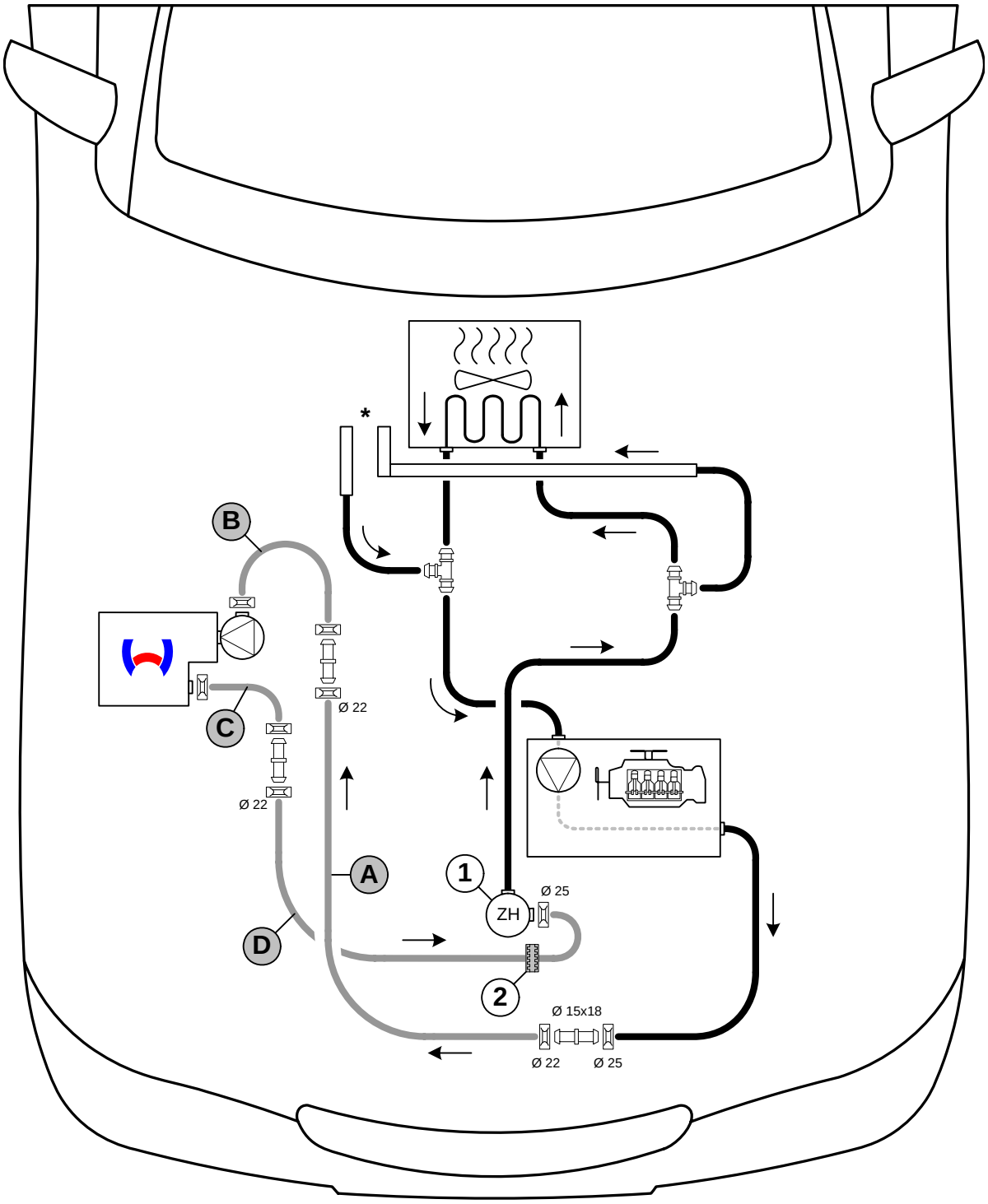
Mount air filter box **2**. Close clip-type cable tie **1**. Aligning hoses. Ensure sufficient distance to neighbouring components.

Fastening hoses

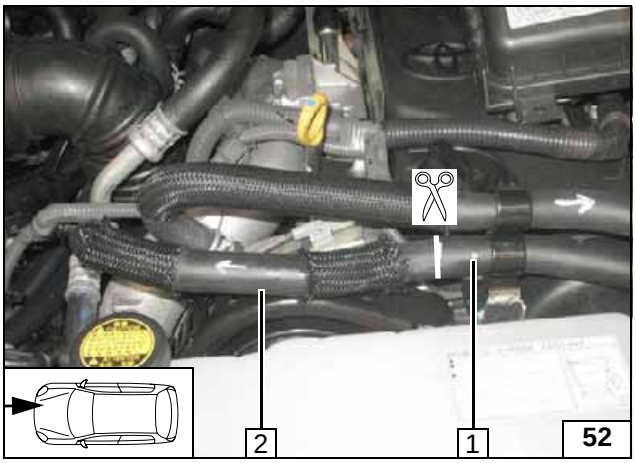
Coolant circuit (heater with rear AC)

WARNING!
Any coolant running off should be collected using an appropriate container. Install hoses so that they are kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that no other hose can be damaged. When installing the hoses, the heater must be filled with coolant.
The connection should be "inline" based on the following diagram:

Hose routing diagram



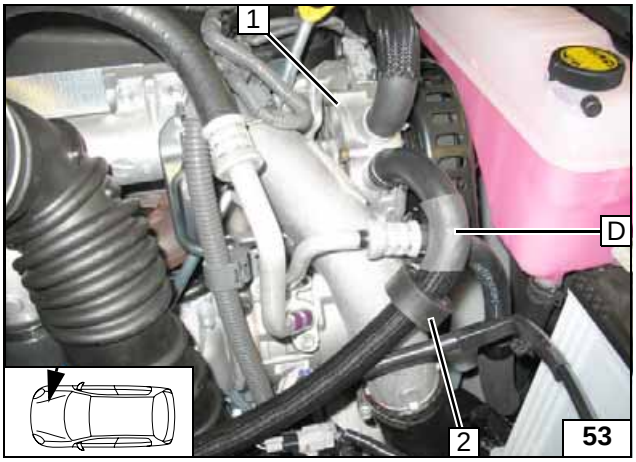
All spring clips without a specific designation = 25 mm dia. **2** = Black (sw) rubber isolator.
All connecting pipes without a specific designation = dia. 15x20.
1 = Mechanical auxiliary heater (power heater)!
***** = Connection of 2nd heat exchanger!



Remove hose section of heat exchanger inlet **2** and discard. Spring clip will not be reused!

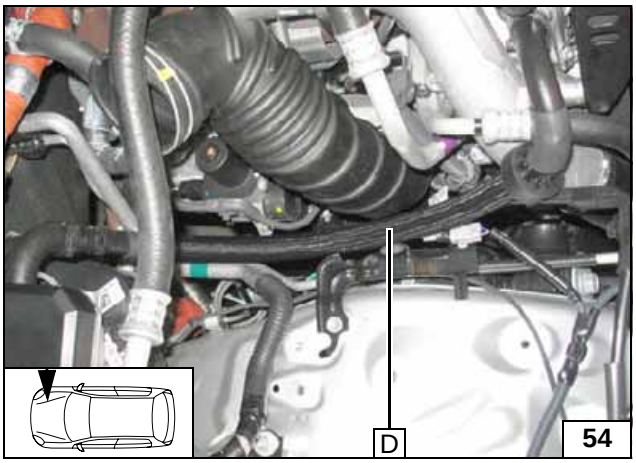
1 Engine-outlet hose section

Cutting point

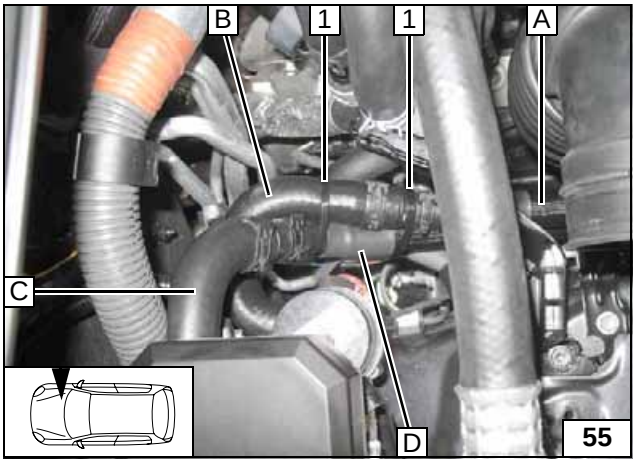


1 Mechanical auxiliary heater (power heater)!
2 Slide on black (sw) rubber isolator and align.

Connecting heat exchanger inlet

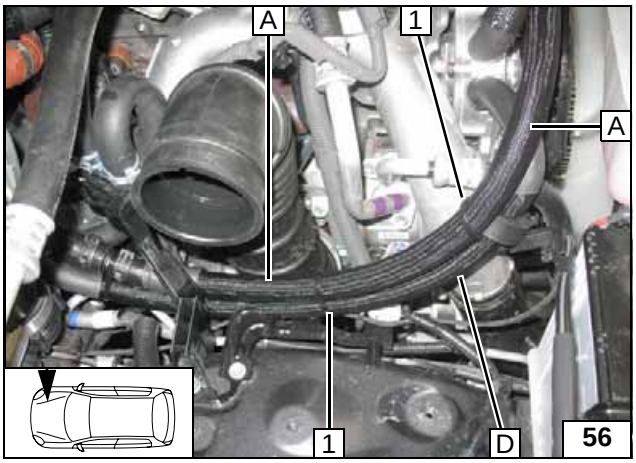


Routing in engine compartment



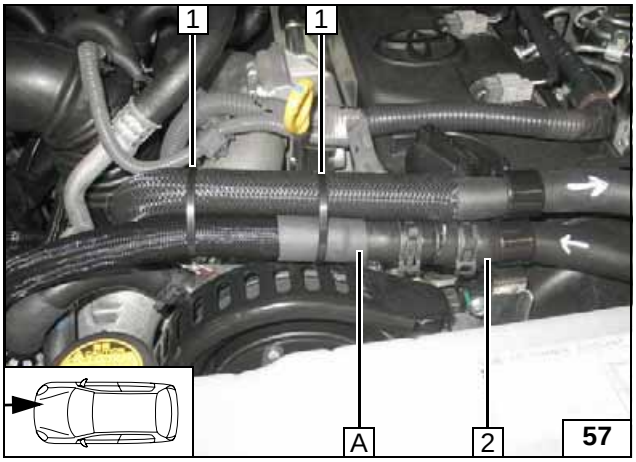
1 Cable tie

Connecting heater



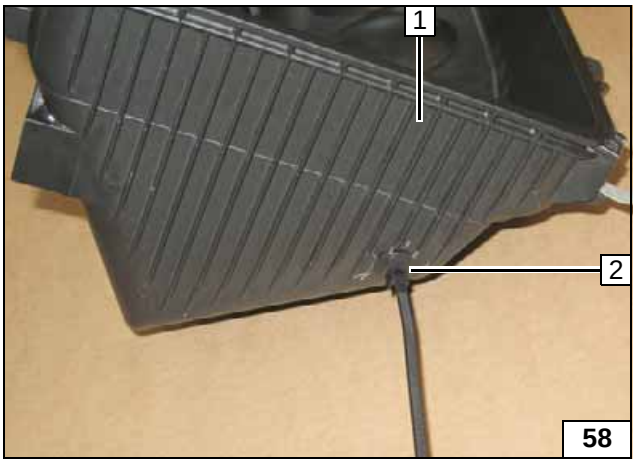
1 Cable tie

Routing in engine compartment



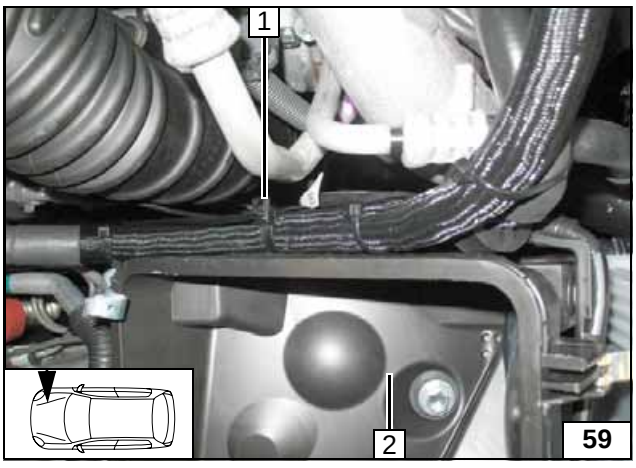
1 Cable tie [2x]
2 Hose of engine outlet

Connecting engine outlet



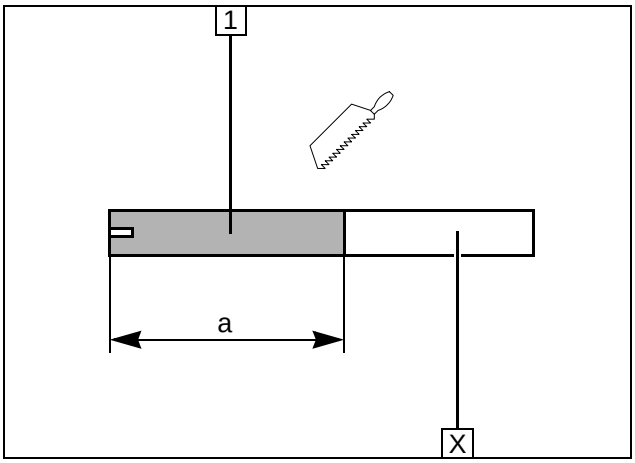
Drill 6mm dia hole in air filter box **1** at Position **2** and install clip-type cable tie **2**!

Preparing air filter box



Mount air filter box **2**. Close clip-type cable tie **1**. Aligning hoses. Ensure sufficient distance to neighbouring components.

Fastening hoses

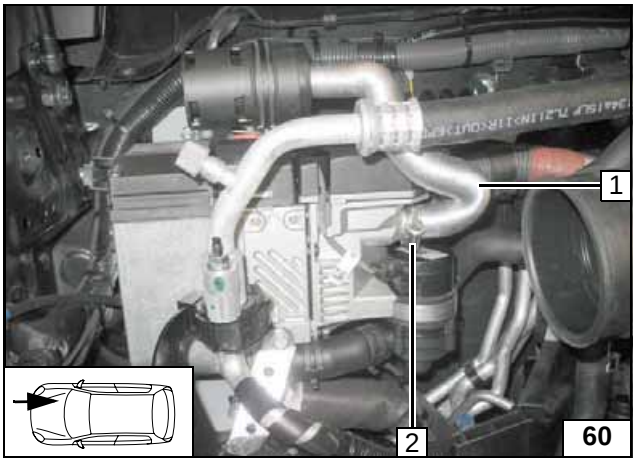


Combustion air

Discard section **X**.

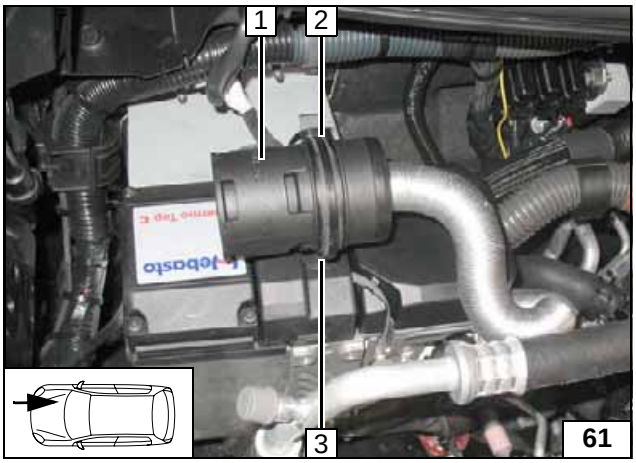
1 Combustion air pipe
a = 280

Cutting combustion air pipe to length



1 Combustion air pipe
2 27 mm dia. clamp

Installing combustion air pipe



Punch through central heater cover at position **3** and mount retaining clip **2**.

1 Silencer

Installing silencer

Final Work

WARNING!
Reassemble the disassembled components in reverse order. Check all hoses, clamps and all electrical connections for firm seating. Insulate and tie back all loose wires.
Only use manufacturer-approved coolant. Spray the heater components with anti-corrosion wax (Tectyl 100K, Order No. 111329).

- **Connect the battery**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.**
- **Set digital timer, teach Telestart transmitter**
- **Make settings on A/C control panel according to the "Operating Instructions for End Customer".**
- **Mount sticker "Switch off parking heater before refueling" in area of filler neck.**

For initial startup and function check, see installation instructions

WARNING!
Perform trial run with locked vehicle and activated passenger compartment monitoring. If false alarms are sounded in the vehicle during the operation of the parking heater, the sensitivity of the passenger compartment monitoring must be reduced as described below!

In case of customer complaint during the operation of the parking heater, please check the setting of the passenger compartment monitoring-sensitivity and reduce it if necessary!

Set passenger compartment monitoring to "insensitive"

The sensitivity of the passenger compartment monitoring is reduced with the **Toyota Intelligent Tester II** or the **TD3** as follows:

- Select menu option "**Personalise**"
- Select the "**Security**" function
- Select "**Open break-in safety window**" and confirm with Enter
- Activate "**ON**"

Webasto
Feel the drive

Webasto AG
Postfach 80
D-82132 Stockdorf / Germany
National Hotline: 01805 93 22 78
(14 Cent aus dem deutschen Festnetz)
Hotfax: 0395 5592 353
Hotmail: hotline@webasto.de
http://www.webasto.de

Operating Instructions for End Customer

Please remove page and add to the vehicle operating instructions.

Note:
We recommend matching the heating time to the driving time.
Heating time = driving time
Example:
For a driving time of approx. 20 min. (in one direction), we recommend not exceeding a switch-on time of 20 min.

WARNING!
If false alarms are activated in your vehicle during the operation of the parking heater, the sensitivity of the passenger compartment monitoring can be checked and reduced if necessary, by your Toyota workshop.

Before parking the vehicle, make the following settings:

Note:
There is no need to preselect the fan speed!

1 Set temperature to "HI“
2 Air outlet to windscreen

Automatic air-condi-tioning